

### 3.0 PIPELINE SEGMENT REMOVAL ALTERNATIVES AND ALTERNATIVES IMPACT ANALYSIS

Revised engineering calculations to assess what would be required to remove the pipeline segment were completed based on field observations and information obtained regarding the pipeline repair project in 1968. These calculations indicate that the weight of the concrete encased pipeline in air is 2,470 lbs per foot compared to 370 lbs per foot of the original pipeline without encasement. This dramatically increased weight presents constraints on the size of pipeline sections that can be cut and lifted to the surface of a work platform. Table 3.0-1 outlines the data utilized to calculate this conclusion.

**Table 3.0-1. Project Data Used for Analysis of Alternative Pipeline Recovery - 214 Feet Within the Surf Zone**

<b>Calculated Values:</b>	
Total pipe and coating weight in seawater/ft	254.13
Total pipe and coating weight in air/per ft	370.27
Estimated concrete encumbrment over pipeline for 100'	14 cu ft per pipeline ft
Weight in seawater of 1 linear ft of encumbered pipe	1458.13 lbs per ft in seawater
Weight in air of 1 linear foot of encumbered pipe	2,470 lbs per ft in air
10' section in seawater with encumbrment	14,581 lbs per 10'section
10' section in air with encumbrment	24,700 lbs per 10' section
Excavation 15:1/100 ft	25,000 cu yds
<b>Observed Site Assumptions:</b>	
Pipeline weight per ft. in seawater	125.61 lb/ft (original estimate) + 128.52 lb/ft (additional weight coat)
Pipeline weight per ft in air	241.75 lb/ft (original estimate) + 128.52 lb/ft (additional weight coat)
Gunitite weight .0594 tons per foot	.0373 tons/ft (original estimate) + .0221 tons/ft (additional weight coat)
Estimated concrete encasement	21 to 24 in./3 sides
Concrete encumbrment volume in cu ft/pipeline ft	24192 cu in/pipeline ft (estimate of encumbrment) * .000578704 (cu in to cu ft)
Linear foot pipeline weight in seawater multiplier 5.738	254.13*5.738
Linear foot pipeline weight in air multiplier 6.670	370.27*6.670
Excavation multiplier 16.666	15*100 ft*16.666

Based on the background knowledge of the project site and the known condition of the pipeline segment to be considered, SCE has evaluated four alternatives for pipeline removal. SCE has developed and evaluated these removal alternatives to complete the decommissioning of the marine terminal as originally proposed. The discussion for each removal alternative includes a focus on

- A description of the methodology,
- A summary listing of pros and cons,
- A discussion of potential environmental impacts, and
- A summary of key issues that need to be successfully addressed if an alternative is to be considered.

The alternatives evaluated by the SCE project team and examined within this document include:

- Alternative “A” - Removal by Surf Sled without Trench Shoring
- Alternative “B” - Removal by Surf Sled with Trench Shoring
- Alternative “C” - Removal by Trestle Based Crane
- Alternative “D” - Explosives and Removal by Surf Sled

### **3.1 ALTERNATIVE “A” - REMOVAL BY SURF SLED WITHOUT TRENCH SHORING**

#### **3.1.1 Methodology of Alternative A**

This alternative would use a surf sled without trench shoring to remove the 214-foot pipeline section. A tow/support vessel(s) would mobilize a surf sled from offshore to the active surf zone. The sled would be positioned over the pipeline section as necessary and would serve as a work platform for pipeline removal operations (see Figure 3-1). Specifically, sand overburden would be removed from the pipeline and divers would be utilized to break up the concrete encasement with pneumatic handheld tools. Once exposed, the pipeline would be cut into approximately 10-foot sections and removed by a crane staged on the surf sled. The concrete encasement would also be recovered to the surface to the degree feasible. The completion time for this alternative has been estimated at 30-45 “favorable weather days”.

Based on the burial depth of 15 feet, this methodology would require a 15:1 slope ratio without the use of trench shoring. To reach the pipeline, an estimated 50,000 cubic yards would be excavated using two 10-inch diameter Toyo jet pumps. This large excavation presents a significant risk of toppling the surf sled by consequently undermining the sled footing during excavation of surrounding sediments. In addition, pipeline sections would need to be removed in approximately 10-foot sections due to weight and the anticipated inability to keep a large excavation open in the active surf zone. This dynamic excavation would need to be continued during cutting and retrieval, presenting an increased safety risk to personnel working within the excavation. The weight in air of each 10-foot pipeline section with encasement cover has been estimated at 24,700 lbs.

Insert Figure 3-1. Diagram of Removal by Surf Sled Without Trench Shoring Alternative

Backside of Figure 3-1

### 3.1.2 Pros/Cons Associated with Alternative A

PROS	CONS
Complies with removing pipeline segment in accordance with lease agreement.	Large excavation required. 15 to 1 slope requirement.
Avoids impacts associated with explosives.	Excavation size results in risk of surf sled toppling.
Avoids potential impacts associated with access to the pipeline during construction activities through the onshore environment; which includes temporary biological disturbance to native plants and species of special concern such as California snowy plover, California least tern, California grunion; as well as temporary disturbance to existing recreational opportunities along Mandalay beach.	Safety risk to personnel working in dynamic excavation.
	Potential environmental impacts due to excavation and displacement of sandy bottom.
	Operation potentially affected by changing oceanographic and weather conditions.
	Potential impacts resulting from anchoring activities.
	Likelihood that some concrete rubble would remain unrecovered.

### 3.1.3 Key Implementation Issues Associated with Alternative A

- Infeasibility of developing effective Surf Sled Toppling Prevention Plan
- Prepare safety plan to minimize risk to personnel working in confined space excavation.
- Develop Critical Operations and Curtailment Plan concerning operation during periods of high wind and/or wave action.

## 3.2 ALTERNATIVE “B” - REMOVAL BY SURF SLED WITH TRENCH SHORING

### 3.2.1 Methodology of Alternative B

This alternative would utilize a surf sled in combination with trench shoring driven around the perimeter of the pipeline corridor to accomplish removal of the pipeline (see Figure 3-2). Removal activities would be conducted from the surf sled deck with the support of a crawler crane. Specifically, sheet pile or similar, would be driven around the pipeline segment to form a cofferdam. Sediments would be excavated at a 10:1 slope ratio from inside the trench shoring in combination with attempted dewatering of the cofferdam. In order to reach the pipeline, an estimated 11,000 cubic yards would be excavated with the use of a 10-inch diameter Toyo jet pumps. Once exposed, the concrete encasement would be broken from

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Insert Figure 3-2. Diagram of Removal by Surf Sled With Trench Shoring Alternative

Backside of Figure 3-2.



around the pipeline using pneumatic breaking tools and approximately 10-foot sections would be cut using oxy-arc cutting equipment. The weight in air of each 10-foot pipeline section with encasement cover has been estimated at 24,700 lbs. Cut pipeline sections would be lifted onto the sled and concrete rubble would be recovered to the extent possible. In practice, the surf sled would be relocated as necessary to remove the pipeline segment. The completion time for this alternative has been estimated at 30-45 “favorable weather days”.

Difficulty in driving trench shoring into the cobble and outside the concrete encasement limits the feasibility of utilizing this approach. In addition, the excavation requires a 10:1 slope ratio and would require a significantly large surf sled to straddle the excavation and trench shoring. Even if a large enough sled is used to provide this ratio, this methodology presents an increased safety risk to personnel working within a confined space excavation subject to dynamic sand movements and changing marine conditions.

### 3.2.2 Pros/Cons Associated with Alternative B

PROS	CONS
Complies with removing the pipeline segment in accordance with lease agreement.	Large excavation required. 10 to 1 slope requirement.
Avoids impacts associated with explosives.	Difficult to drive sheet pile into cobble and outside concrete encasement. Difficulty in maintaining the trench shoring width due to excavation undermining.
Reduces the size of the excavation when compared to not using shoring.	Difficulties in digging in cobble.
Avoids potential impacts associated with access to the pipeline during construction activities through the onshore environment; which includes temporary biological disturbance to native plants and species of special concern such as California snowy plover, California least tern, California grunion; as well as temporary disturbance to existing recreational opportunities along Mandalay beach.	Significantly large sled required to straddle excavation.
	Safety risk to personnel working in dynamic confined space excavation.
	Potential environmental impacts due to excavation and displacement of sandy bottom.
	Operation potentially affected by changing oceanographic and weather conditions.
	Potential impacts resulting from anchoring activities.

PROS	CONS
	Likelihood that some concrete rubble would remain unrecovered.

### 3.2.3 Key Implementation Issues Associated with Alternative B

- Develop plan for installation of trench shoring.
- Address difficulty of driving shoring into cobble and outside of concrete encasement.
- Address difficulty of maintaining trench width with excavation undermining potential.
- Prepare safety plan to minimize risk to personnel working in dynamic confined space excavation.
- Develop Critical Operations and Curtailment Plan concerning operation during periods of high wind and/or wave action.

## 3.3 ALTERNATIVE “C” - REMOVAL BY TRESTLE BASED CRANE

### 3.3.1 Methodology of Alternative C

This alternative would involve the construction of a trestle, including driven support piles, to provide a work platform for work activities, extending from the shoreline to the offshore pipeline segment termination. The trestle would be constructed in parallel with the pipeline corridor. Trench shoring would also be driven around the pipeline section to form a cofferdam (see Figure 3-3). The removal sequence for this alternative would be consistent with those presented in the surf sled with trench shoring alternative, with the exception of removal operations being conducted from the trestle rather than a surf sled. Sections would also be cut in 10-foot sections weighing approximately 24,700 lbs with the encasement cover. The completion time for this alternative has been estimated at 45-90 “favorable weather days”.

Similar to the surf sled with trench shoring alternative, difficulty in driving trench shoring and trestle support piles into the cobble and outside the concrete encasement limits the feasibility of utilizing this approach. Due to a required 10:1 excavation slope ratio, estimated 11,000 cubic yard excavation, and a need to construct the trestle close enough to the pipeline segment for a crane to reach, concerns regarding the stability of the trestle location further reduces the feasibility of this alternative. This methodology also presents a safety risk to personnel working within the dynamic confined space excavation of the sheet pile cofferdam.

Insert Figure 3-3. Diagram of Removal by Trestle Based Crane Alternative

**Backside of Figure 3-3.**

### 3.3.2 Pros/Cons Associated with Alternative C

PROS	CONS
Complies with removing pipeline in accordance with lease agreement.	Large excavation required. 10 to 1 slope requirement.
Avoids impacts associated with explosives.	Difficult to drive sheet pile and trestle pilings into cobble and outside concrete encasement.
Avoids potential impacts associated with anchoring activities.	Difficulties in digging in cobble. Difficulty in maintaining the trench shoring width due to excavation undermining.
	Safety risk to personnel working in dynamic confined space excavation.
	Stability concerns regarding trestle location adjacent to pipeline.
	Potential environmental impacts due to excavation and construction of trestle in sandy habitat.
	Potential for impacts associated with construction of trestle and onshore operations.
	Likelihood that some concrete rubble would remain unrecovered.

### 3.3.3 Key Implementation Issues Associated with Alternative C

- Develop plan for construction of trestle and installation of trench shoring.
- Address difficulty of driving support piles and shoring into cobble.
- Design to reduce stability concerns.
- Address difficulty of maintaining trench width with excavation undermining potential.
- Prepare safety plan to minimize risk to personnel working in excavation.
- Develop Critical Operations and Curtailment Plan concerning operation during periods of high wind and/or wave action.

## 3.4 ALTERNATIVE “D” - EXPLOSIVE DEMOLITION AND REMOVAL BY SURF SLED

### 3.4.1 Methodology of Alternative D

This alternative would use internally set explosives to fracture the pipeline and concrete into manageable pieces. Explosives would be packed into the 214-foot pipeline section by a qualified demolition contractor. However, there is an inherent safety risk to personnel handling explosives. In addition, the required explosive weight is unknown due to the nature of pipeline and extent of concrete cover. This makes it difficult to predict the degree of fracturing that will result from the use of explosives, and may necessitate multiple explosive charges to achieve fracturing. After explosive demolition, a surf sled would be mobilized to the project area and

positioned over the demolition site. A crane staged on the surf sled would recover the pieces to the greatest extent feasible using conventional bucket recovery methodology.

### 3.4.2 Pros/Cons Associated with Alternative D

PROS	CONS
Complies with removing pipeline in accordance with lease agreement.	Significant impacts to marine mammals and fish due to percussive impacts.
	Explosive weight unknown due to nature of pipeline and extent of concrete cover.
	Possible necessity of multiple, graduated weight, explosive charges to achieve fracturing.
	Difficult to predict degree of fracturing that will result.
	Remove pieces with surf sled mounted crane (see surf sled constraints).
	High potential that some rubble will remain unrecovered.
	Increased safety hazards to personnel handling explosives.
	Operation potentially affected by changing oceanographic and weather conditions.
	Potential impacts resulting from anchoring activities.

### 3.4.3 Key Implementation Issues Associated with Alternative D

- Develop an Explosives Safety Plan that includes biological resources, public safety, and personnel protection
- Evaluate structural integrity to determine required explosive weight

## 3.5 ALTERNATIVES SUMMARY

Table 3.5-2 provides a summary of project alternatives evaluated by the project team. This summary includes the estimation of excavated materials, equipment requirement, time frames, and any special considerations.

**Table 3.5-2. Summary of Alternative Requirements**

<b>Alternative</b>	<b>Excavation Size (cubic yards)</b>	<b>Equipment Necessary</b>	<b>Time Needed to Complete Work</b>	<b>Special Conditions/Considerations</b>
<b>A</b>	50,000	2 x 10" Toyo Pumps @ 12 hrs. continuous	30-45 days	Low surf conditions: Diver exposure to moving sand, surf, and heavy equipment
<b>B</b>	11,000	1 x 10" Toyo Pump @ 12 hrs. continuous	30-45 days	Low surf conditions: Diver exposure to moving sand, surf, and heavy equipment
<b>C</b>	Potential failure of pile during excavation down to pipe	Sheet piles (Problem with achieving tip penetration of sheet piles with cobble level at top of pipe)	45-90 days	Exposure of personnel and equipment to long period of surf activity;
<b>D</b>	Excavation necessary to set explosive charges	Explosives specialist, surf sled, Toyo Pump	Approximately 30-60 days	Inherent safety risk to personnel handling explosives, potential significant percussive impacts to biological resources

### 3.6 PIPELINE SEGMENT REMOVAL ALTERNATIVES IMPACT ANALYSIS

The potential environmental impacts of the proposed Mandalay Marine Terminal Decommissioning Program were previously evaluated by the CSLC under the guidelines established by the California Environmental Quality Act (CEQA). This review determined that some potentially significant impacts could result from the project; however, these impacts could be mitigated (reduced) to an insignificant level. Therefore, a Mitigated Negative Declaration (State Clearinghouse Number 2001041108) was completed, circulated to the public and agencies for comment, and adopted (March 25, 2002) by the CSLC.

The following analysis is based upon the environmental data provided in the original MND prepared for the Program and this Proposed Mitigated Negative Declaration, and briefly summarizes the potential environmental impacts associated with the abandonment, in place, of a 214-foot pipeline segment and other removal alternatives. Table 3.6-1 provides a summary of the potential impacts associated with each.

**Table 3.6-1. Summary Table of Comparative Environmental Evaluation (Potential for Environmental Impacts to Occur)**

	<b>Alternative A - Removal by Surf Sled Without Trench Shoring</b>	<b>Alternative B - Removal by Surf Sled With Trench Shoring</b>	<b>Alternative C - Removal by Trestle Based Crane</b>	<b>Alternative D - Explosive Demolition and Removal by Surf Sled</b>	<b>Proposed Project- Abandonment in Place</b>
Geology	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	-
Air Quality	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	-
Water Quality	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	-
Biological Resources	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	-
Noise	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	-
Light and Glare	-	-	-	-	-
Land Use Planning	-	-	-	-	-
Risk of Upset	<b>X (S/L)</b>	<b>X (S/L)</b>	<b>X (S/L)</b>	<b>X (S/L)</b>	<b>X (S/L)</b>
Population and Housing	-	-	-	-	-
Transportation Circulation	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	-
Public Services	-	-	-	-	-
Energy and Mineral Resources	-	-	-	-	-
Utilities and Service Systems	-	-	-	-	-
Hazards	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>
Aesthetics	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	-
Recreation	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>	<b>X (S)</b>
Cultural Resources	-	-	-	-	-

- =Not Applicable/Not Likely that Potential for Impact to Occur Exists

**X** =Potential for Impact to Occur: X(S) Indicates a short term impact, X(L) Indicates a long term impact

### 3.6.1 GEOLOGY

As indicated within evaluations of nearshore oceanographic conditions and processes influencing the site (Coastal Environments, 2000), Mandalay Beach is known for strong nearshore currents and significant nearshore sand movement. Longshore littoral currents are generated in this area by waves breaking at an angle to the shoreline. Historically, winter storm



events have caused significant damage and widespread erosion in the Mandalay area since the 1930s (as witnessed in the 1968 storm event that originally unearthed the pipeline). However, based on supporting information obtained in this report, the quantities of sand being transported to Mandalay Beach almost exactly balance the longshore movement and ultimate losses from the site, resulting in a seasonal balance of sand cover in the active surf zone/nearshore area.

Currently, based upon surveys conducted by Fugro West and direct diver observations during pipeline removal attempts, the seafloor surrounding the 214-foot nearshore pipeline segment is composed of sandy sediments and cobble fines. This geostructural composition results in a problematic nearshore environment that is subject to liquefaction and soil settlement conditions. As witnessed during previous removal attempts, excavating within the active surf zone is very difficult due to constant sand migration and dynamic sediment movements, especially at the depths required (15 feet) to uncover the pipeline segment. In addition, the cobble fines found in the vicinity of the pipeline segment would make it difficult to drive pile or trestle support piles to depths necessary to ensure stability of structures. Therefore, pipeline removal attempts utilizing Alternatives A-D which would necessitate work activities within these unstable soil conditions, would have the greatest potential to result in harm to project personnel and/or support structures during decommissioning activities. In addition, these excavation activities would also result in large quantities of sediments to be displaced, resulting in further disturbance of the seafloor. Temporary disturbance to the seafloor associated with excavation and displacement of sediments would need to be mitigated for Alternatives A-D through the use of a silt curtain or other comparable measure intended to minimize the plume of suspended sediments to the greatest extent feasible.

### **3.6.2 AIR QUALITY**

Air quality impacts associated with removal operations were determined to be insignificant under the regulations of the Ventura County Air Pollution Control District due to the short-term nature of the project. However, the County of Ventura is a severe non-attainment area for Nox and Ozone; therefore even temporary construction emissions are required to implement Best Management Practices (BMP's). Alternatives A-D would result in an incremental increase in impacts to local air quality during operation of diesel-powered construction equipment and vessels during the construction period; however such impacts would be considered short term and mitigable through implementation of BMP's as described in the original Program MND (i.e. minimization of simultaneous equipment operation, etc.) as necessary.

### **3.6.3 WATER QUALITY**

Alternatives A-D would involve excavation and temporary disturbance of seafloor sediments during removal of the final pipeline segment. It is estimated that the pipeline is buried beneath 15 feet of sand. To remove the nearshore pipeline segment, a significant amount of sand will be displaced (11,000 cu/yds), thereby increasing local turbidity and associated water quality impacts. In addition, Alternatives A-D will necessitate the destruction of the outer concrete cap, which either through heavy equipment or by explosives, will result in

increased turbidity resulting from suspension of sediments and concrete particulates. However, as the disturbance to sediment is short-term for all proposed alternatives, no major long-term impact to water quality is expected to result.

Alternatives A-D for pipeline removal also involve the use of marine vessels. Operation of marine vessels has the potential for leakage of fuels and lubricants to the ocean. Vessels used would all be licensed and operating in accordance with regulatory requirements. However, the potential exists for an accidental discharge of fuels or lubricants from work vessels or the crane to the marine environment. The operation and refueling of such equipment would be governed by a Hazardous Materials Management Plan which would also address the proper response to such an accidental discharge as did a comparable Plan prepared for the original Program.

### **3.6.4 BIOLOGICAL RESOURCES**

Based on previous biological studies done at the project site within the intertidal zone, organisms residing within the intertidal zone are typified by hardy species that are capable of withstanding stresses associated with waves and daily tidal fluxes. The intertidal survey found only a few sand crabs and large polychaete worms. Although they have been noted in the area in past surveys, no large or small clams such as pismo or bean clams have been found within the project work corridor. In addition, the sandy intertidal habitat present at the project site is devoid of hard substrate. As such, this area does not have the relatively permanent surfaces that are necessary for the establishment of the complex communities that are present where long-lived sessile algal and sessile invertebrate (e.g., mussels, barnacles, etc.) species occur.

Alternatives A-D could potentially disturb sand crabs, bean, and pismo clams. However, the intertidal portion of the project site is expected to be rapidly repopulated following project operations by species from immediately adjacent or distant sandy beaches, and impacts of the Removal Alternatives to the intertidal community is expected to be insignificant. Alternatives A-D would also disrupt the onshore biological environment through the mobilization of equipment to the nearshore area. As previously identified within the original MND completed for the original Program, biological monitors would be required during these activities in order to ensure that no impacts to sensitive biological resources (i.e. snowy plovers, least terns, California grunion, or native dune vegetation) would occur.

In addition, although the pipeline segment is buried, Alternative D involving the use of explosives to demolish the pipeline segment, has the potential to impact nearshore biological resources. This is based on the fact that pressure pulses from explosives are known to be able to cause physical injury or death to marine life. Impacts resulting from the use of explosives include the risk to marine mammals in the surrounding area, possible mortality of birds near the blast area and fish mortality. As such, a plan would be required to establish a safety zone and avoid impacts to marine mammals as well as develop measures intended to reduce impacts to fish.

All four alternatives for pipeline removal involve the use of marine vessels. The use of marine vessels has the potential to result in impacts to marine mammals through either direct contact or harassment. Anchor placement has the potential to impact species utilizing the seafloor surrounding anchor placement sites. If implemented, removal Alternatives A-D would require the development of an anchoring plan as mitigation to minimize impacts to benthic communities to the greatest extent feasible.

### **3.6.5 NOISE**

The four alternatives for pipeline removal would involve additional short-term construction-related noise sources as a result of equipment operation as well as transport of equipment and personnel to the project site. However, as described in the original Program MND, due to the proximity of the project site in relation to sensitive noise receptors, this is considered an adverse, but insignificant impact.

### **3.6.6 LIGHT AND GLARE**

Alternatives A-D involving decommissioning activities that would not result in significant changes to light or glare over the original Program since the majority of these operations are anticipated to take place during the day. If work extended into dark hours, lighting would be focused toward the work area and not toward other uses (e.g. roads, residences). Therefore, light and glare impacts would remain insignificant.

### **3.6.7 LAND USE PLANNING**

Alternatives A-D would involve the use of marine vessels and other methods in order to allow for the removal of the 214-foot pipeline segment with a surf-sled or trestle-based crane. However, for the same reasons as provided in the MND adopted for the original Program, none of these alternatives would have an effect on land use planning issues.

### **3.6.8 RISK OF UPSET**

As described in the original Program MND, removal Alternatives A-D do not involve the risk of vessel sinking or collision greater than that typically found in any offshore vessel activities due to the fact that all vessels utilized for mobilization of equipment to the worksite would be constructed with multiple watertight compartments to isolate flooding and reduce the risk of sinking should a tank be punctured. However, there is an unexpected, but slight potential for an accident at sea with any of the vessels intended for use in the four alternatives for pipeline removal.

In addition, as previously discussed within Section 3.6.1 (Geology), excavation within the active surf zone is very difficult due to constant sand migration and dynamic sediment movements, especially at the depths required (15 feet) to uncover the pipeline segment. The cobble fines found in the vicinity of the pipeline segment would make it difficult to drive pile or trestle support piles to depths necessary to ensure stability of structures. Therefore, pipeline removal attempts utilizing Alternatives A-D, which would necessitate work activities within these

unstable soil conditions, and subject to dynamic sediment movement and/or associated toppling of the bottom founded structures such as the surf sled or tressle, would result in potentially significant risk of upset to personnel safety and fuel leaks to the ambient environment.

### **3.6.9 POPULATION AND HOUSING**

The four alternatives for pipeline removal would require a limited number of employees on a temporary basis to operate the marine vessels and associated excavation equipment. These employees are expected to reside in the area, but would not create a significant impact on population levels or housing.

### **3.6.10 TRANSPORTATION/CIRCULATION**

Alternatives A-D would involve short-term construction activities that will generate vehicle trips as a result of worker and equipment transportation to and from the site, and transportation of solid waste to the appropriate disposal locations. As described within the original Program MND, given the capacity of local streets and low number of trips generated as a result of these activities, the proposed Removal Alternatives are not expected to have a significant impact on transportation or circulation within the area.

### **3.6.11 PUBLIC SERVICES**

The original Program MND determined that its implementation would not result in any significant impacts on public services. Similarly, none of the evaluated alternatives would result in any additional impacts to public services due to the short duration of activities and the low need for public services and goods.

### **3.6.12 ENERGY AND MINERAL RESOURCES**

The four alternatives for the 214-foot pipeline segment removal would use fuel for marine vessels and associated removal equipment. This use of fuel would not be significant. None of these alternatives would require the use of mineral resources.

### **3.6.13 UTILITIES AND SERVICE SYSTEMS**

The original Program MND determined that impacts to utilities and service systems would be insignificant. The four alternatives for the pipeline segment removal would not require additional demand on utilities or service systems than that of the original Program.

### **3.6.14 HAZARDS**

Alternatives A-C would not create any additional significant impacts in regard to hazards as opposed to the previous MND. However, serious concerns regarding biological resources and safety of personnel are associated with Alternative D due to the use of explosives, which inherently exposes workers to the impacts of potential accidental detonation. If selected,

Removal Alternative D would require development of an Explosives Safety Plan that includes biological resources, public safety, and personnel protection.

### **3.6.15 AESTHETICS**

The four alternatives involving pipeline removal would include the presence of marine vessels and construction equipment at the project site. However, the use of this equipment would be short term in nature; therefore, as concluded in the MND for the original Program, the temporary aesthetic impacts associated with these alternatives are insignificant.

### **3.6.16 RECREATION**

Impacts to recreational beach use associated with Alternatives A-D would be similar to those addressed in the original Program MND. This preclusion area would be relatively small when compared to the surrounding area available for recreational activities and would be of a short-term nature, however an Onshore Recreational Access Plan would be required to reduce the potential for this impacts to insignificant.

### **3.6.17 CULTURAL RESOURCES**

As identified in the original Program MND, there are no historical resources, or structures located onshore within the project area. In addition, there are no shipwrecks located within the project site or close enough to the project site to be significantly impacted. Bathymetric and Geophysical Surveys of the area conducted for the original Program found that there were no observable man-made objects or exposed debris on the seafloor other than the known facilities. As such, there are no known offshore historical or cultural resources within the project site. Considering the above, none of the proposed Pipeline Removal Alternatives would result in any impacts to any historical/cultural resources.

## **3.7 DRAFT MITIGATION MONITORING PROGRAM (MMP)**

The following Mitigation Monitoring Program Outline has been developed to ensure that in the event that the revised proposed project is not selected; mitigation measures identified within the Alternatives Analysis (Section 3.0) of the Mitigated Negative Declaration (MND) are fully implemented to reduce environmental impacts to an insignificant level. In addition, the Mitigation Monitoring Program complies with the requirements of Public Resources Code 21081.6, which requires the lead agency to adopt a reporting or monitoring program.

**Table 3.7-1. Removal Alternatives Mitigation Monitoring Program Outline**

<b>Alternatives and Associated Impacts</b>	<b>Potential Mitigation Measures</b>	<b>Responsible Party</b>	<b>Residual Impact</b>
<b>Alternatives A – C Using Non-Explosive Methodology (i.e. Surf Sled and Trestle Based Crane) for Removal</b>			
<b>Geology:</b> Suspended sediments during offshore removal of pipeline.	<ul style="list-style-type: none"> <li>Use a silt curtain or other comparable measure to minimize the plume of suspended sediments.</li> </ul>	CSLC	Insignificant
<b>Water Quality:</b> Increases in local turbidity, suspension of sediments, operation and refueling of marine vessels	<ul style="list-style-type: none"> <li>A Contaminated Materials Management Plan (CMMP) will be implemented to ensure safe handling of wastewater and contaminated materials (See Hazards/Risk of Upset).</li> <li>An Oil Spill Response Plan (OSRP) will also be implemented to minimize the potential for hazardous spills during the offshore operations (See Hazards/Risk of Upset).</li> </ul>	CSLC	Insignificant
<b>Air Quality:</b> Incremental increase in impacts to local air quality during operation of diesel-powered construction equipment and vessels.	<ul style="list-style-type: none"> <li>Standard air quality mitigation measures, based upon the model mitigation measures presented in the Ventura County Air Quality Assessment Guidelines (2000), designed to reduce impacts to air quality shall be implemented throughout the duration of the proposed project.</li> <li>Implementation of Best Management Practices (BMPs) during offshore construction activities.</li> </ul>	CSLC	Insignificant
<b>Biology:</b> Disturbance to organisms within the intertidal zone as well as disturbance to onshore species during mobilization of equipment to the nearshore area.	<ul style="list-style-type: none"> <li>The California State Lands Commission approved biological monitor will be retained by SCE on the project site at all times during project operations to conduct pre-activity surveys and to minimize the impacts to sensitive avifauna.</li> <li>A Marine Wildlife Contingency Plan (MWCP) will be</li> </ul>	CSLC	Insignificant

Alternatives and Associated Impacts	Potential Mitigation Measures	Responsible Party	Residual Impact
	<p>implemented to avoid marine mammal impacts.</p> <ul style="list-style-type: none"> <li>A Site Restoration Plan will be implemented to restore the onshore site to pre-project conditions</li> </ul>		
<p><b>Hazards/Risk of Upset:</b> Excavation within the active surf zone.</p>	<ul style="list-style-type: none"> <li>Project activities will be conducted in accordance with the selected contractor's standard health and safety protocols and procedures.</li> <li>The Oil Spill Response Plan that was prepared for the original project shall be implemented to reduce the potential of hydrocarbon spills to an insignificant level.</li> <li>The Contaminated Materials Management Plan that was prepared for the original project shall be implemented to reduce the potential impacts associated with the handling of hazardous materials to an insignificant level.</li> <li>Any vessels greater than 300-gross tons in weight shall maintain a vessel specific OSPR approved oil spill contingency plan.</li> <li>Signs shall be placed along the periphery of the onshore project site stating that the area is temporarily off limits to non-project personnel due to the presence of hazards.</li> <li>Construction fencing shall be placed to restrict the access of the public across the project site.</li> <li>A Notice to Mariners shall be issued a minimum of two weeks prior to the commencement of project</li> </ul>	<p>CSLC</p>	<p>Insignificant</p>

Alternatives and Associated Impacts	Potential Mitigation Measures	Responsible Party	Residual Impact
	operations.		
<b>Recreation:</b> Temporary obstruction to recreational beach use.	<ul style="list-style-type: none"> <li>Temporary fencing will be installed around the immediate work areas of the onshore project site to ensure public safety during pipeline pulling operations.</li> <li>Onshore Recreational Access Plan</li> </ul>	CSLC	Insignificant
<b>Alternative D – Explosive Demolition and Removal by Surf Sled</b>			
<b>Geology:</b> Suspended sediments during offshore removal of pipeline.	<ul style="list-style-type: none"> <li>Use a silt curtain or other comparable measure to minimize the plume of suspended sediments.</li> </ul>	CSLC	Insignificant
<b>Water Quality:</b> Increases in local turbidity, suspension of sediments, operation and refueling of marine vessels	<ul style="list-style-type: none"> <li>A Contaminated Materials Management Plan (CMMP) will be implemented to ensure safe handling of wastewater and contaminated materials (See Hazards/Risk of Upset).</li> <li>An Oil Spill Response Plan (OSRP) will also be implemented to minimize the potential for hazardous spills during the offshore operations (See Hazards/Risk of Upset).</li> </ul>	CSLC	Insignificant
<b>Air Quality:</b> Incremental increase in impacts to local air quality during operation of diesel-powered construction equipment and vessels.	<ul style="list-style-type: none"> <li>Standard air quality mitigation measures, based upon the model mitigation measures presented in the Ventura County Air Quality Assessment Guidelines (2000), designed to reduce impacts to air quality shall be implemented throughout the duration of the proposed project.</li> <li>Implementation of Best Management Practices (BMPs) during offshore construction activities.</li> </ul>	CSLC	Insignificant
<b>Biology:</b> Disturbance to organisms within the intertidal zone as well as	<ul style="list-style-type: none"> <li>The California State Lands Commission approved biological monitor will be</li> </ul>	CSLC	Insignificant



Alternatives and Associated Impacts	Potential Mitigation Measures	Responsible Party	Residual Impact
<p>disturbance to onshore species during mobilization of equipment to the nearshore area.</p> <p>Risk of injury/death to marine mammals, birds, and fish due to use of explosives.</p> <p>Disturbance to benthic species from anchor placement.</p>	<p>retained by SCE on the project site at all times during project operations to conduct pre-activity surveys and to minimize the impacts to sensitive avifauna.</p> <ul style="list-style-type: none"> <li>• A Marine Wildlife Contingency Plan (MWCP) will be implemented to avoid marine mammal impacts.</li> <li>• A Site Restoration Plan will be implemented to restore the onshore site to pre-project conditions</li> <li>• Explosives Safety Plan</li> <li>• Anchoring Plan</li> </ul>		
<p><b>Hazards/Risk of Upset:</b> Excavation within the active surf zone, Concerns regarding biological resources and safety of personnel.</p>	<ul style="list-style-type: none"> <li>• Project activities will be conducted in accordance with the selected contractor's standard health and safety protocols and procedures.</li> <li>• The Oil Spill Response Plan that has been prepared for this project (Appendix J of this MND) shall be implemented to reduce the potential of hydrocarbon spills to an insignificant level.</li> <li>• The Contaminated Materials Management Plan that has been prepared for this project (Appendix K of this MND) shall be implemented to reduce the potential impacts associated with the handling of hazardous materials to an insignificant level.</li> <li>• Any vessels greater than 300-gross tons in weight shall maintain a vessel specific OSPR approved oil spill contingency plan.</li> <li>• Signs shall be placed along</li> </ul>	CSLC	Insignificant

Alternatives and Associated Impacts	Potential Mitigation Measures	Responsible Party	Residual Impact
	<p>the periphery of the onshore project site stating that the area is temporarily off limits to non-project personnel due to the presence of hazards.</p> <ul style="list-style-type: none"> <li>Construction fencing shall be placed to restrict the access of the public across the project site.</li> <li>A Notice to Mariners shall be issued a minimum of two weeks prior to the commencement of project operations.</li> <li>Explosives Safety Plan</li> </ul>		
<b>Recreation:</b> Temporary obstruction to recreational beach use.	<ul style="list-style-type: none"> <li>Temporary fencing will be installed around the immediate work areas of the onshore project site.</li> <li>Onshore Recreational Access Plan</li> </ul>	CSLC	Insignificant
<b>Proposed Project – Abandonment In-Place</b>			
Unlikely, but potential re-exposure of abandoned segment	An abandonment agreement between SCE and the CSLC is required.	CSLC	N/A